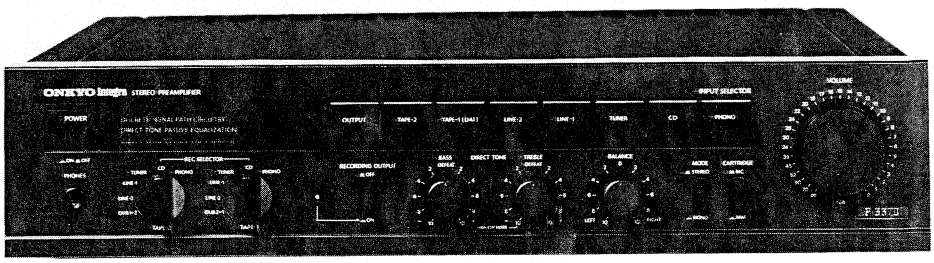
P-3370

SERIAL NO. 3245

ONKYO SERVICE MANUAL

Stereo Preamplifier

MODEL P-3370



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Input Sensitivity and Impedance:	PHONO MC:	160μV/220 ohms
	PHONO MM:	2.5mV/47 kohms
	CD, TUNER, LINE, TAPE PLAY:	150mV/20 kohms
Rated Output and Impedance:	TAPE REC:	150mV/1.2 kohms (PHONO)
	OUTPUT:	1.0V/160 ohms Max. 6V
RIAA Deviation:	±0.2dB, 20–20,000Hz	
Frequency Response (CD, TUNER, LINE, TAPE):	+0, –3dB, 0.8MHz – 170kHz	
Phono Overload:	PHONO MM:	210mV RMS at 1 kHz, THD 0.05%
	PHONO MC:	13mV RMS at 1 kHz, THD 0.05%
Total Harmonic Distortion:	0.0008% at PHONO MM, 3V output 0.003% at PHONO MC, 3V output 0.0005% at CD, TUNER, LINE and TAPE, 3V output	
Intermodulation Distortion (CD):	0.003% (70Hz : 7kHz = 4 : 1)	
Signal-to-Noise Ratio:	PHONO MC:	81dB (IHF A-202, Shorted)
	PHONO MM:	92dB (IHF A-202, Shorted)
	CD:	100dB (IHF A-202, Shorted)
Tone Control (Vol. –20dB):	BASS:	±10dB at 20Hz
	TREBLE:	±8dB at 20kHz
Filters:	HIGH CUT:	(TREBLE min.): 6dB/oct, 7 kHz
Inputs:	PHONO, CD, TUNER, LINE 1 & 2, TAPE PLAY 1 & 2	
Outputs:	OUTPUT, TAPE REC OUT 1 & 2 PHONES	
Power Supply:	AC 220V, 50Hz	
Dimensions:	435 (W) x 101 (H) x 403 (D) mm 17-1/8" x 3-15/16" x 15-7/8"	
With side panels:	465 (W) x 102 (H) x 403 (D) mm 18-5/16" x 4" x 15-7/8"	
Weight:	6.9 kg, 15.2 lbs.	
With side panels:	7.8 kg, 17.2 lbs.	

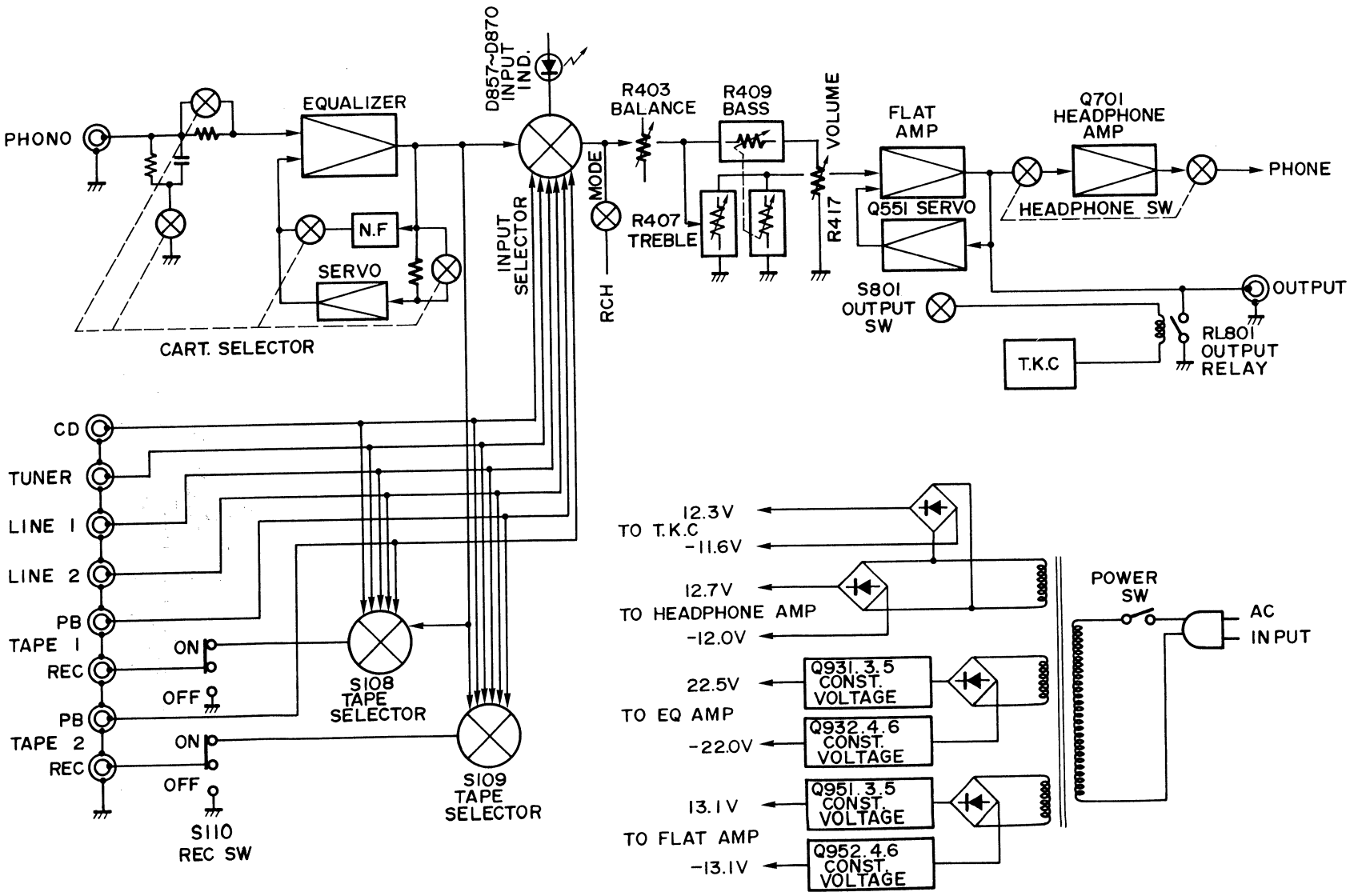
Specifications and features are subject to change without notice.

PRECAUTIONS

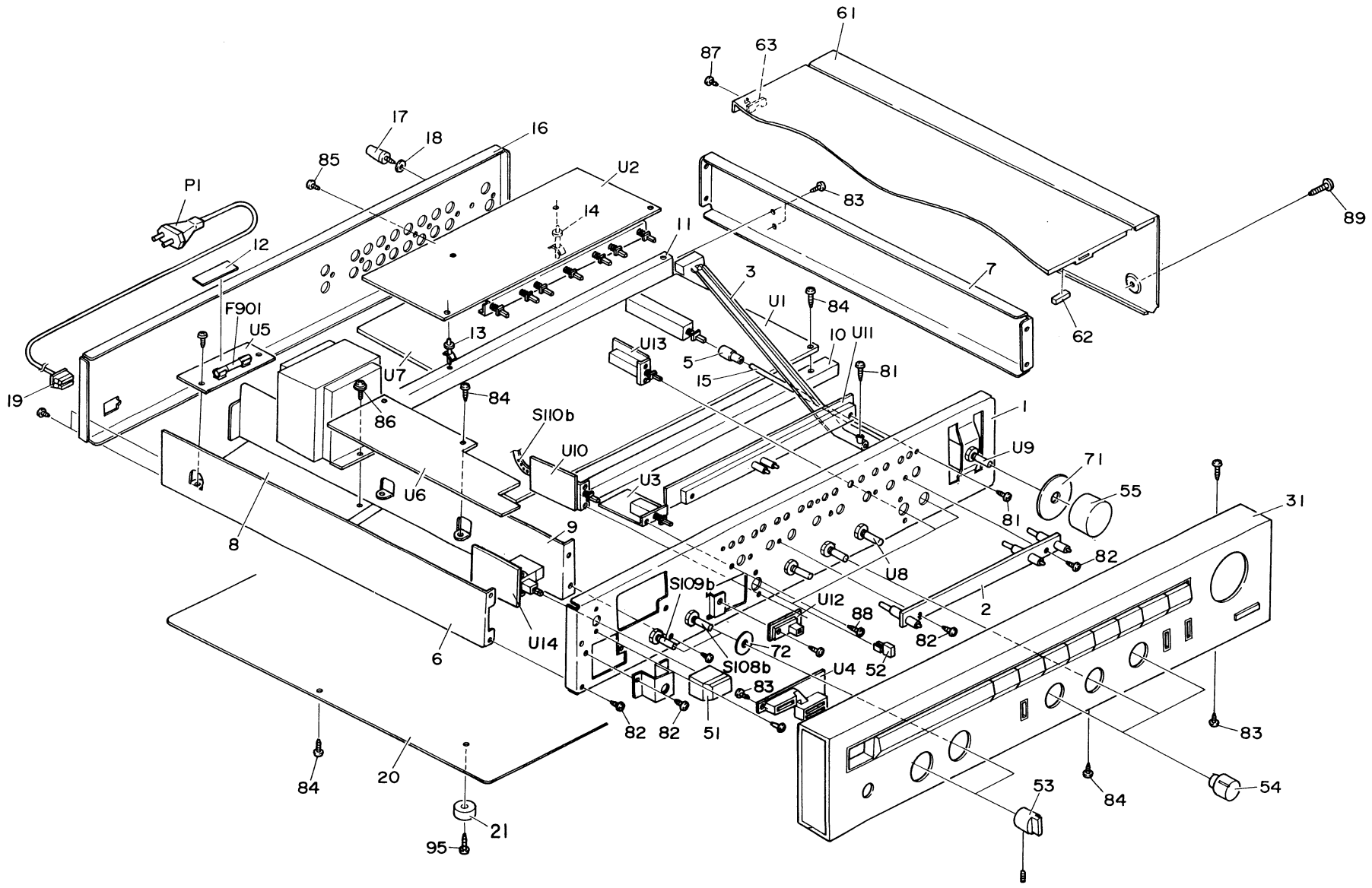
1. **Replacing the fuses**
   For continued protection against risk of fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F902	252063	0.5A–SE–EAWK, Primary fuse

BLOCK DIAGRAM



EXPLODED VIEW

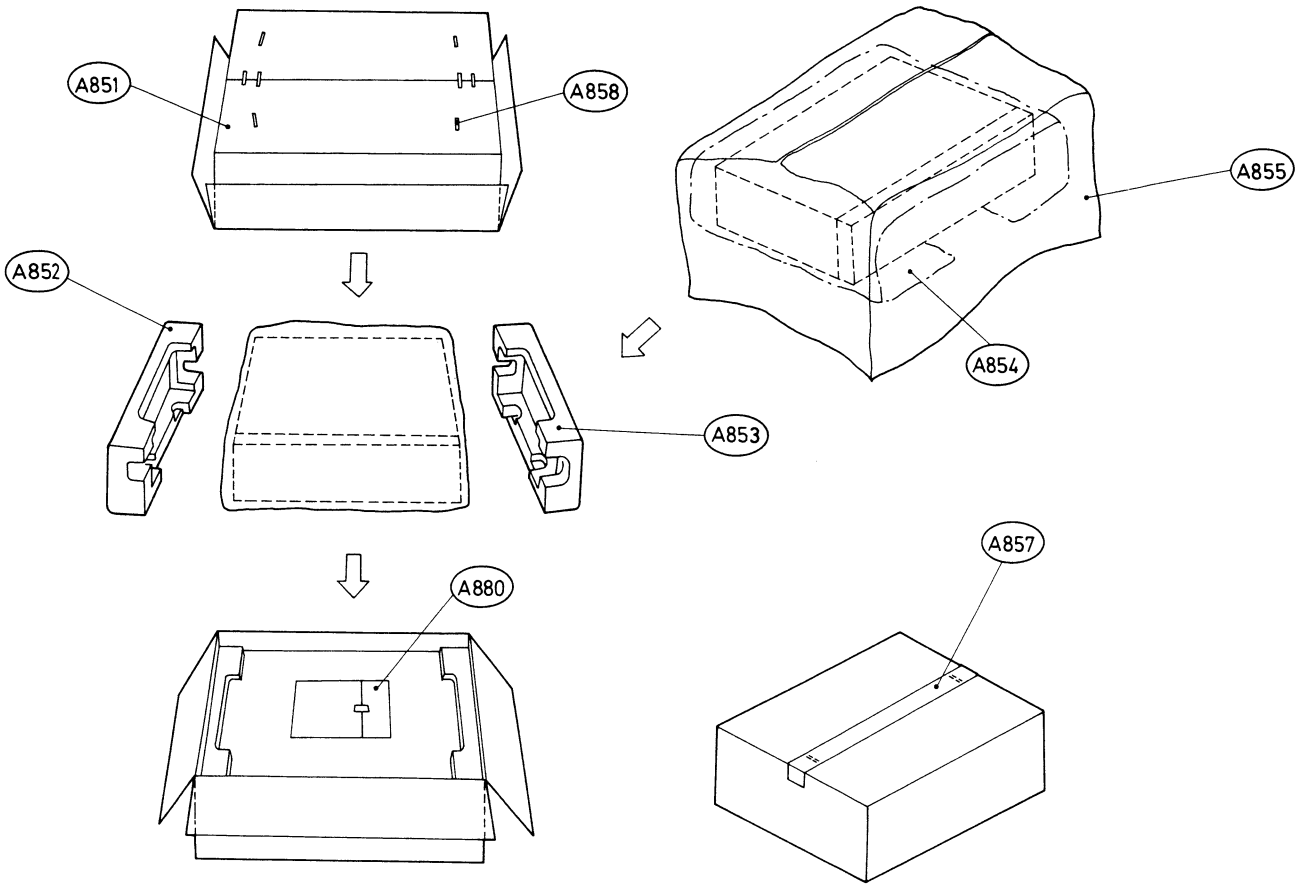


PARTS LIST

REF NO.	PART NO.	DESCRIPTION
1	27110306A	Front bracket
2	27267469B	Guide joint ass'y
3	27273051B	Joint M
5	28320135	Connector
6	27115217A	Side bracket L
7	27115202A	Side bracket R
8	27130451	Bracket,power transformer
9	27130452B	Bracket SUB
10	27130453	Bracket FR
11	27130425	Bracket RE
12	29360626-1	Label,Fuse
13	27190480	KGLS-8S,Holder
14	27190470	KGLS-18S,Holder
15	27260224	Shaft,push
16	27120901A	Back panel
17	25060041	Ground terminal
18	87644010	W4× 10F(BC), Washer
19	27300750	⚠Strainrelief
20	27170233	Bottom board
21	27175009A	Leg
22	27141085A	Bracket,headphone
23	27225075	Shielded plate
31	17792121	Front panel ass'y
51	28322522A	Knob,power
52	28322703	Knob,push
53	28322705A	Knob,recording
54	28322704	Knob,tone
55	28322529A	Knob,volume
61	28184318A	Top cover
62	28140020	Cushion
63	27270209	Spacer,cover
71	28140126	Φ53mm,Cushion
72	28140127	Φ32mm,Cushion
76	28185255	Side panel L
77	28185256	Side panel R
81	833430080	3TTP+8P(BC),Tapping screw
82	838430068	3TTB+6B(BC), Tapping screw
83	838430088	3TTB+8B(BC),Tapping screw
84	831430088	3TTW + 8B(BC), Tapping screw
85	831430100	3TTW+10P(BC),Tapping screw
86	830440089	4TTC+8C(BC),Tapping screw
87	801230	3TTS+8B(BC),Tapping screw
88	82143006	3P+6FN(BC),Pan head screw
89	838440089	4TTB+8C(BC),Tapping screw
91	87313006	M-3B,Toothed washer
F902	252063	⚠0.5A-SE-EAWK, Primary fuse
P001	253129A or 253127A	⚠AS-CEE, Power supply cable
S108b	25030287	NRSM-106-30BU, Wire section, remote switch
S109b	25030288	NRSM-106-30BU, Wire section, remote switch
S110b	25065309A	Wire section, remote switch
T001	2300159	⚠NPT-941G, Power transformer
U1	17792528-1A	NAEF-2828-1A, Equalizer amplifier pc board ass'y
U2	17792529-1A	NASW-2829-1A, Input selector switch pc board ass'y
U3	17798530-1	NASW-2830-1, Output switch pc board ass'y
U4	17798531-1	NADIS-2831-1, Power indicator pc board ass'y
U5	17794532-1A	NAFU-2832-1A, Fuse terminal pc board ass'y
U6	17798533-1	NAPS-2833-1, Power supply and headphone terminal pc board ass'y
U7	17798534-1	NASW-2834-1, Rec. selector switch pc board ass'y
U8	17798535-1	NATC-2835-1, REC.Selector switch pc board ass'y
U9	17798536-1	NAVR-2836-1, Volume control pc board ass'y
U10	17798537-1	NASW-2837-1, Recording output switch pc board ass'y
U11	17798538-1	NADIS-2838-1, Input display pc board ass'y
U12	17798539-1	NADIS-2839-1, Recording indicator pc board ass'y
U13	17798540-1	NASW-2840-1, Mode switch pc board ass'y
U14	17794541-1	NASW-2841-1, Power switch pc board ass'y

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

PACKING PROCEDURES



REF. NO.	PARTS NO.	DESCRIPTION
A851	29051392	Master carton box
A852	29091079A	Pad (L)
A853	29091080A	Pad (R)
A854	29095012-1	Protection sheet
A855	29100038A	720×950mm. Poly-vinyl bag
A857	260012	Damplon tape
A858	282301	Sealing hook
A880	Accessary bag ass'y	
	29341046	Instruction manual
	29365016B	Warranty card
	2910006A	250×350mm. Poly-vinyl bag for accessary

PRINTED CIRCUIT BOARD–PARTS LIST

EQUALIZER AMPLIFIER PC BOARD (NAEF-2828-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q201～Q204	2211535 or	2SK146(GR) or
	2211536	2SK146(BL)
Q205～Q208	2211895 or	2SC1815L(GR) or
	2211896	2SC1815L(BL)
Q209,Q210	2211414	2SC1627(Y)
Q211,Q212	2211515 or	2SA995(F) or
	2211516	2SA995(G)
Q213～Q218	2211975	2SA1015L(GR)
Q219,Q220	2211895 or	2SC1815L(GR) or
	2211896	2SC1815L(BL)
Q221,Q222	2211414	2SC1627(Y)
Q223,Q224	2211424	2SA817(Y)
Q225,Q226	2211414	2SC1627(Y)
Q227,Q228	2211424	2SA817(Y)
Q501,Q502	2212805 or	2SK389(GR) or
	2212806	2SK389(BL)
Q503～Q508	2211255	2SC1815(GR)
Q509,Q510	2211515 or	2SA995(F) or
	2211516	2SA995(G)
Q511～Q514	2211455	2SA1015(GR)
Q515,Q516	2211255	2SC1815(GR)
Q517,Q518	2211164	2SC2120(Y)
Q519,Q520	2211504	2SA950(Y)
Q521,Q522	2211164	2SC2120(Y)
Q523,Q524	2211504	2SA950(Y)
Q931	2201404 or	2SD1406(Y) or
	2201403	2SD1406(O)
Q932	2201394 or	2SB1015(Y) or
	2201393	2SB1015(O)
Q933	2211254 or	2SC1815(Y) or
	2211255	2SC1815(GR)
Q934	2211454 or	2SA1015(Y) or
	2211455	2SA1015(GR)
Q935	2211254 or	2SC1815(Y) or
	2211255	2SC1815(GR)
Q936	2211454 or	2SA1015(Y) or
	2211455	2SA1015(GR)
Q951	2201404 or	2SD1406(Y) or
	2201403	2SD1406(O)
Q952	2201394 or	2SB1015(Y) or
	2201393	2SB1015(O)
Q953	2211254 or	2SC1815(Y) or
	2211255	2SC1815(GR)
Q954	2211454 or	2SA1015(Y) or
	2211455	2SA1015(GR)
Q955	2211254 or	2SC1815(Y) or
	2211255	2SC1815(GR)
Q956	2211454 or	2SA1015(Y) or
	2211455	2SA1015(GR)
	ICs	
Q301,Q302	222585	NJM4558DXB
Q551,Q552	222465	NJM4558D
	Diodes	
D201～ D204	223163	1SS133
D205～ D210	225232	LTZ-R15,LED
D501～ D504	223163	1SS133
D804	223163	1SS133
D505～ D510	225232	LTZ-R15,LED
D931,D932,D951	2239511 or	RD6.8E-B1 or
D952	2243171	MTZ6.8-A

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C205,C206	379121035	0.01μF,50V,Film (DEW)
C209,C210	372121814	180pF, 50V, Styrene
C211,C212	372122214	220pF, 50V, Styrene
C213～ C216	379121535	0.015 μF, 50V, Film (DEW)
C217,C218	379125625	5600pF, 50V, Film (DEW)
C219,C220	372122214	220pF, 50V, Styrene
C221,C222	379127524	7500pF, 50V, Film (DEW)
C223～ C226	379121034	0.01μF, 50V, Film (DEW)
C227,C228	379124334	0.043 μF,50V, Film (DEW)
C229,C230	379123634	0.036 μF, 50V, Film (DEW)
C231,C232	372126804	68pF, 50V, Styrene
C237,C238	391232217	220 μF, 10V, Elect. (MUSE)
C239,C240	379122725	2700pF, 50V, Film (DEW)
C241～ C244	354761019	100 μF, 35V, Elect.
C245,C246	354784709	47μF, 50V, Elect.
C301,C302	354741009	10μF, 16V, Elect.
C303～ C306	391252217	220 μF, 25V, Elect. (MUSE)
C307,C308	372123304	33pF,50V, Styrene
C501,C502	372121014	100pF, 50V, Styrene
C503,C504	372122214	220pF, 50V, Styrene
C505,C506	354784799	0.47μF,50V, Elect.
C507,C508	372122704	27pF, 50V, Styrene
C515,C516	391232217	220 μF, 10V, Elect. (MUSE)
C517～ C520	354761019	100 μF, 35V, Elect.
C521,C522	354784709	47μF, 50V, Elect.
C551～ C554	354762209	22μF,35V, Elect.
C555,C556	372123304	33pF, 50V, Styrene
C931,C932	354782219	220 μF, 50V, Elect.
C935,C936	354741019	100 μF,16V, Elect.
C937,C938	354753319	330 μF, 25V, Elect.
C951,C952	354762219	220 μF, 35V, Elect.
C955,C956	354741019	100 μF,16V, Elect.
C957,C958	354743319	330 μF, 16V, Elect.
	Resistors	
R225～ R228	442526804	68Ω, 1/2W, Metal oxide film
R239,R240	442528204	82Ω, 1/2W, Metal oxide film
R265,R266	442524314	430 Ω, 1/2W, Metal oxide film
R267～ R274	442523304	33Ω, 1/2W, Metal oxide film
R275,R276	441625614	560 Ω, 1W, Metal oxide film
R529～ R536	442522404	24Ω, 1/2W, Metal oxide film
R539,R540	441622014	200 Ω, 1W, Metal oxide film
	Switch	
S201	25035546	NPS-182-L508
	Sockets	
P456,P851	25050272	NSCT-8P100
P852	25050267	NSCT-3P95
	Plugs	
P201a,P202a	25055132	NPLG-2P116
P551a,P552a	25055133	NPLG-3P117
P602a,P751a	25055133	NPLG-3P117
	Radiator	
P931,P932	27160176	RAD-56
P951,P952	27160145	RAD-51
	Plate	
	25060032B	Buss
	Relay	
RL801	25065282	NRL-2P1.25A-DC12-39

INPUT SELECTOR SWITCH PC BOARD (NASW-2829-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Coils	
L101～ L104	231069A	NCH-1119
L201,L202	231030	NCH-1070
L601,L602	231069A	NCH-1119
	Switches	
S101～ S107	25035524	NPS-742-L486
	Capacitors	
C151～C158	372121014	100pF,50V,Styrene
C201,C202	372122214	220pF,50V,Styrene
C161,C162	372121014	100pF,50V,Styrene
C165,C166	372121014	100pF,50V,Styrene
C171～C175	379121035	0.01μF,50V,Film (DEW)
	Terminals	
P101,P102	25045190	NPJ-2PDBL74
P103	25045191	NPJ-6PDBL75
P104	25045208	NPJ-4PDBL88
P105	25045165	NPJ-4PDBL59
P601	25045180	NPJ-2PDBL70
	Sockets	
P151～P154	25050273	NSCT-9P101
P201	2000631	NSAS-4P587
P202	2000632	NSAS-4P588
P203	2000556	NSAS-6P512
P204	2000557	NSAS-6P513
P205	2000552	NSAS-6P508

VOLUME CONTROL PC BOARD (NAVR-2836-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
R417	5104194	N27DGL50KT30M, Variable resistor
P551,P552	2000630	NSAS-6P586, Socket ass'y

TONE CONTROL CIRCUIT PC BOARD (NATC-2835-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q801	2211255	2SC1815(GR)
Q802	2211455	2SA1015(GR)
Q803	2211164	2SC2120(Y)
	Diodes	
D801	223145	1S2076TD
D802,D803	2239492 or	RD6.2E-B2 or
	2243162	MTZ6.2-B
	Capacitors	
C401～C404	379121634	0.016 μF, 50V, Film (DEW)
C405,C406	379121824	1,800pF, 50V, Film (DEW)
C407,C408	379128234	0.082 μF, 50V, Film (DEW)
C801	354744709	47μF, 16V, Elect.
C802	354761009	10μF, 35V, Elect.
	Resistors	
R403	5148114A	N16RGMC50KMN30, Variable, Balance
R407	5148115A	N16RGM11C99.8K30, Variable, Treble
R409	5144005	N16RQM11C69.6K88K30, Variable, Bass
R801	442521324	1.3kΩ,1/2W,Metal oxide film
R807	442526214	620 Ω,1/2W,Metal oxide film
R809	442521324	1.3kΩ,1/2W,Metal oxide film
R810	442521524	1.5kΩ,1/2W,Metal oxide film
	Sockets	
P451,P452	25050267	NSCT-3P95

POWER SUPPLY AND HEADPHONE TERMINAL PC BOARD (NAPS-2833-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q701	222957	M-5216L
	Diodes	
D701-D704	223145	1S2076TD
D901,D902	223867	WL02
D903,D904	223890	W01RL
D905～D910	223896	1N4003F
	Capacitors	
C701,C702	354780479	4.7 μF,50V,Elect.
C703,C704	372122214	220pF,50V,Styrene
C705,C706	352744709	47μF,16V,Elect.
C707,C708	379121035	0.01μF,50V,Film (DEW)
C901,C902	375104745	0.47μF, 125V, Film (ME)
C903～C906	375101045	0.1 μF, 125V, Film (ME)
C907,C908	354782229	2200μF, 50V, Elect.
C909,C910	354762229	2200μF, 35V, Elect.
C911,C912	354741029	1000μF, 16V, Elect.
C913	354753319	330 μF, 25V, Elect.
C914	379121035	0.01μF, 50V, Film (DEW)
C915,C916	354780109	1 μF,50V,Elect.
	Resistors	
R711,R712	441624704	47Ω, 1W, Metal oxide film
R901,R902	442523304	33Ω, 1/2W, Metal oxide film
R903～R906	442520104	1 Ω, 1/2W, Metal oxide film
R907,R908	442520204	2 Ω, 1/2W, Metal oxide film
R909,R910	442523304	33Ω, 1/2W, Metal oxide film
R911	441621224	1.2kΩ,1W,Metal oxide film
	Socket	
P751	2000551	NSAS–6P507
	Terminals	
P701	25045203	HLJ-4318-01-3010,Headphone

REC. SELECTOR SWITCH PC BOARD (NASW-2834-1)-PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	Switches	
S108a,S109a	25065079	NSS-4643, Remote switch
S110a	25065190	NSS-4285, Remote switch
	Socket	
P155	25050267	NSCT–3P95

OUTPUT SWITCH PC BOARD (NASW-2830-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
S801	25035372	NPS-122-L336, Output ON/OFF switch
P853	25050267	NSCT-3P95,Socket

RECORDING OUTPUT SWITCH PC BOARD (NASW-2837-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
S110C	25035227	NPS-122-L191,Switch

FUSE TERMINAL PC BOARD (NAFU-2832-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
F902a	25050065	⚠YSH-403T Fuse holder
F902	252063	⚠0.5A-SE-EAWK,Fuse

INPUT DISPLAY PC BOARD (NADIS-2838-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	L.E.Ds	
D857~D872	225137CG or 225137DG or 225137DY	SEL2413CG or SEL2413DG or SEL2413DY
	Resistor	
R854	442521324	1.3kΩ, 1/2W, Metal oxide film
	Holder	
	27190456	Holder (LED)

POWER INDICATOR PC BOARD (NADIS-2831-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
D851,D852	225142	SEL2413K,LED
	27190455	Holder (LED)

POWER SWITCH PC BOARD (NASW-2841-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
C981	3500065A	0.01μF, AC400V, Capacitor (IS)
P901	27300601	SB-1925, Cover (capacitor)
S901	25035398	NPS-111-362P, Power switch

RECORDING INDICATOR PC BOARD (NADIS-2839-1)

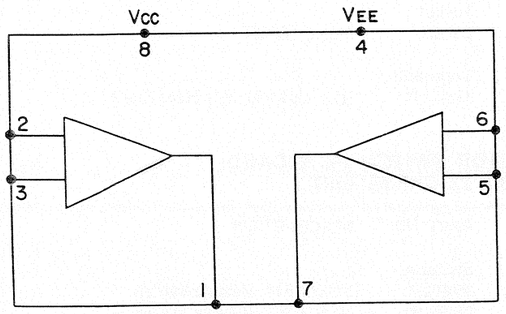
CIRCUIT NO.	PART NO.	DESCRIPTION
D856	225233RB or 225233RC 27190319A	GL5HY40-PB or GL5HY40-RC Holder (LED)

MODE SWITCH PC BOARD (NASW-2840-1)

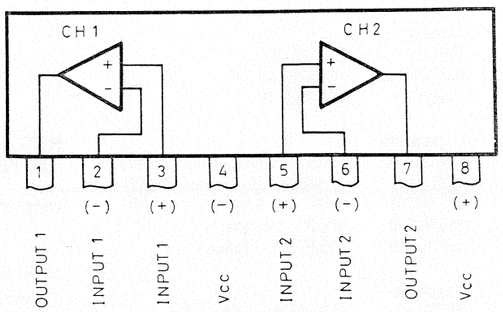
CIRCUIT NO.	PART NO.	DESCRIPTION
S401	25035372	NPS-122-L336,Push

IC BLOCK DIAGRAM

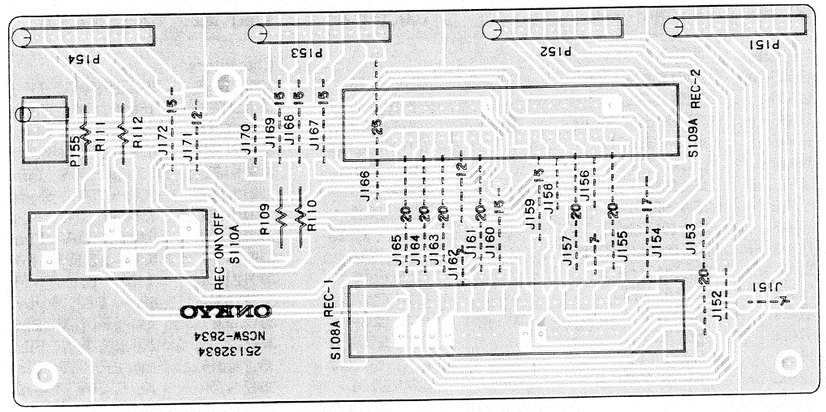
NJM4558D



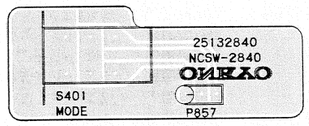
M-5216L



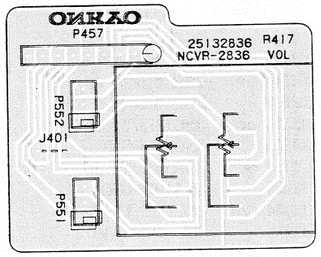
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



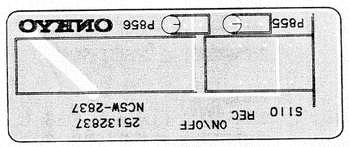
REC. SELECTOR SWITCH PC BOARD



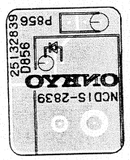
MODE SWITCH PC BOARD



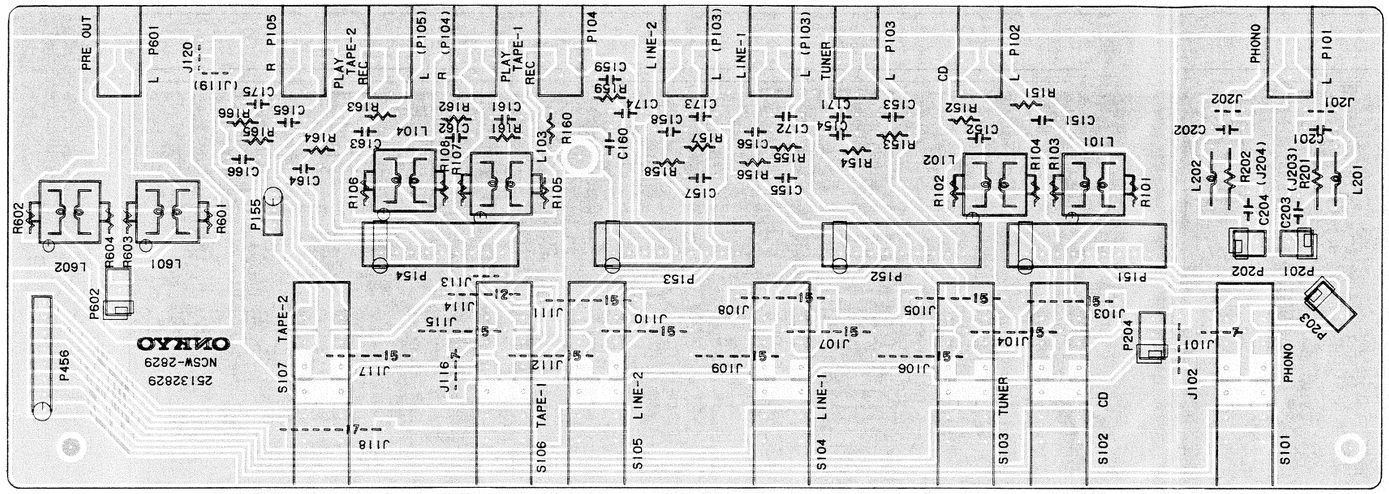
VOLUME CONTROL PC BOARD



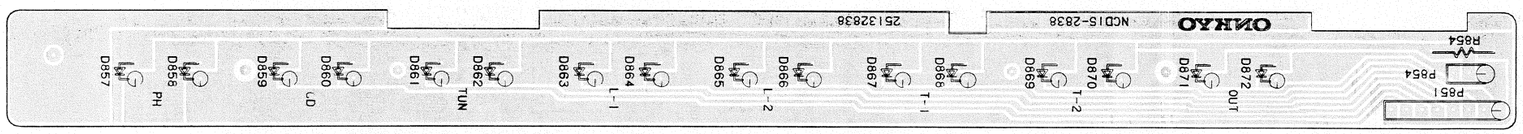
RECORDING OUTPUT SWITCH PC BOARD



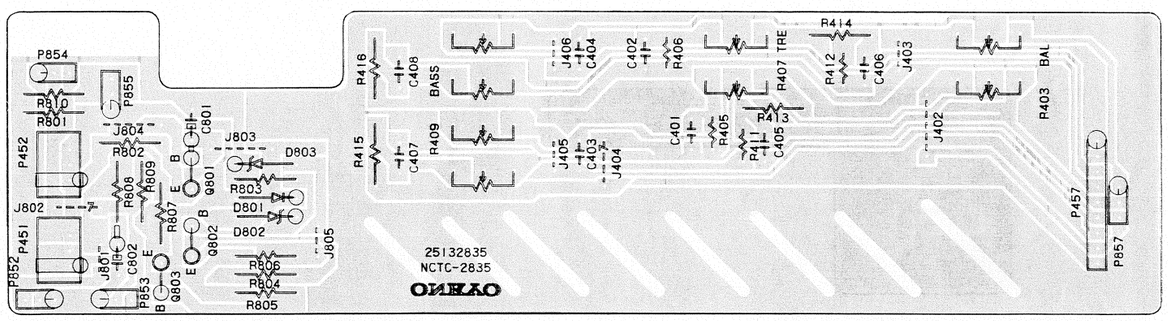
RECORDING INDICATOR PC BOARD



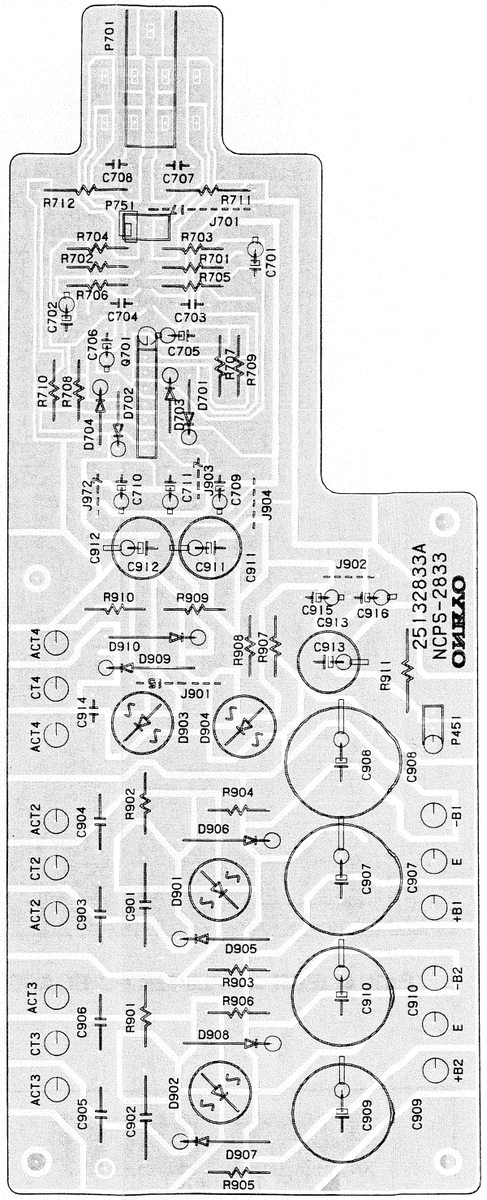
INPUT SELECTOR SWITCH PC BOARD



INPUT DISPLAY PC BOARD

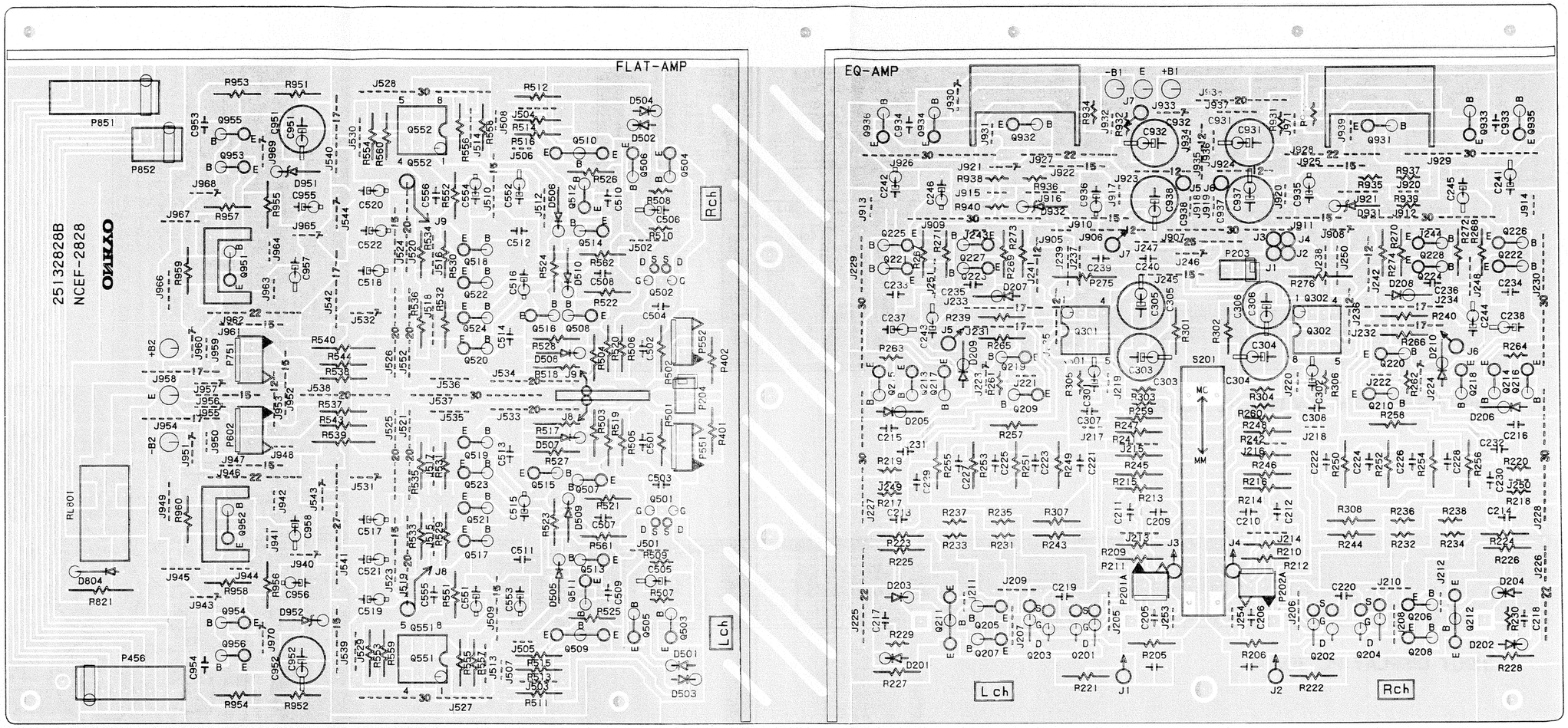


TONE CONTROL PC BOARD

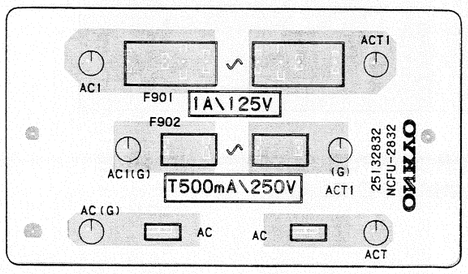


POWER SUPPLY AND HEADPHONE TERMINAL PC BOARD

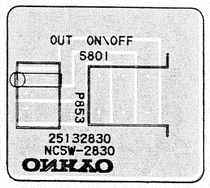
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



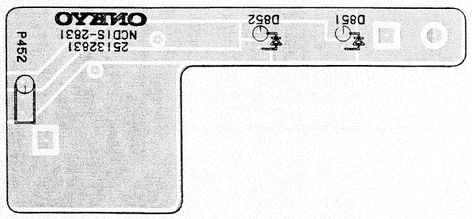
EQUALIZER AMPLIFIER PC BOARD



FUSE TERMINAL PC BOARD

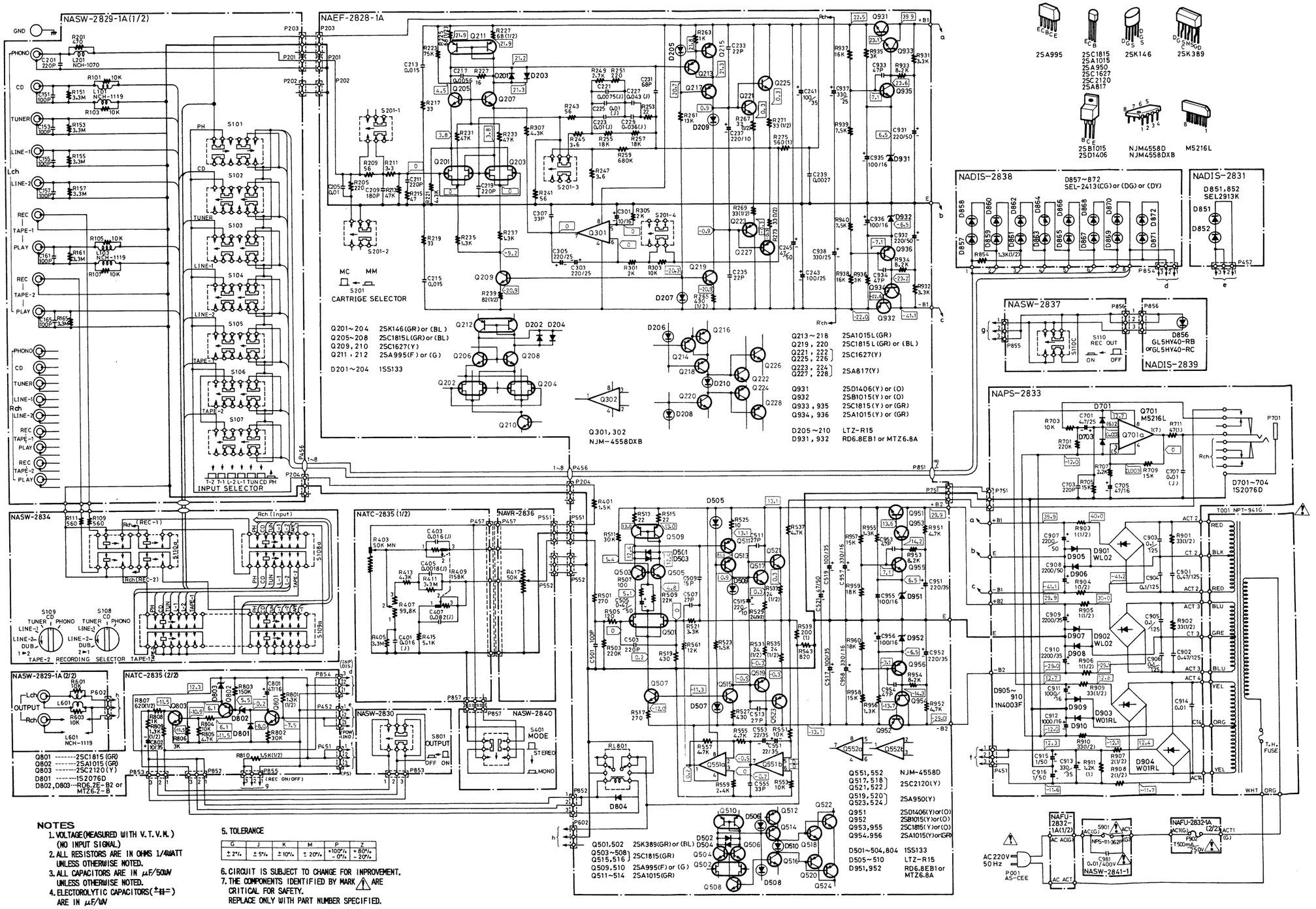


OUTPUT SWITCH PC BOARD



POWER INDICATOR PC BOARD

SCHEMATIC DIAGRAM



NOTES

1. VOLTAGE(MEASURED WITH V.T.V.M.) (NO INPUT SIGNAL)
2. ALL RESISTORS ARE IN OHMS 1/4WATT UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE IN μF/50WV UNLESS OTHERWISE NOTED.
4. ELECTOROLYTIC CAPACITORS(±=) ARE IN μF/WV
5. TOLERANCE

G	J	K	M	P	Z
±2%	±5%	±10%	±20%	+100% -0%	+80% -20%

6. CIRCUIT IS SUBJECT TO CHANGE FOR INPROVEMENT.
7. THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.

ONKYO CORPORATION